

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
11 August 2005 (11.08.2005)

PCT

(10) International Publication Number
WO 2005/073367 A1

(51) International Patent Classification⁷: **C12N 9/16,**
A61K 38/46

(21) International Application Number:
PCT/DK2005/000068

(22) International Filing Date: 30 January 2005 (30.01.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
PA 2004 00144 30 January 2004 (30.01.2004) DK
60/540,061 30 January 2004 (30.01.2004) US

(71) Applicant (for all designated States except US):
ZYMENEX A/S [DK/DK]; Roskildevej 12C, DK-3400
Hillerød (DK).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **FOGH, Jens**

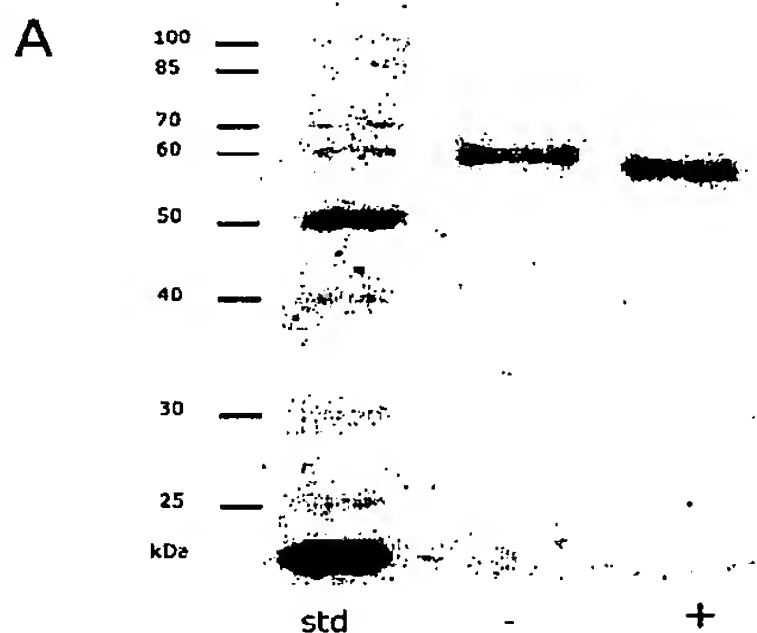
[DK/DK]; Bjergagervej 37, DK-3540 Lynge (DK). **AN-**
DERSSON, Claes [SE/SE]; Tallåsvägen 5, S-187 43 Täby
(SE). **WEIGELT, Cecilia** [SE/SE]; Banérgatan 27, 1 tr.,
S-115 22 Stockholm (SE). **MØLLER, Christer** [SE/SE];
Lindvägen 26, S-246 53 Tullinge (SE). **HYDÉN, Pia**
[SE/SE]; Dalgangen 6, S-182 74 Stocksund (SE).

(74) Agent: **PLOUGMANN & VINGTOFT A/S**; Sundkrogs-
gade 9, Post Office Box 831, DK-2100 Copenhagen Ø
(DK).

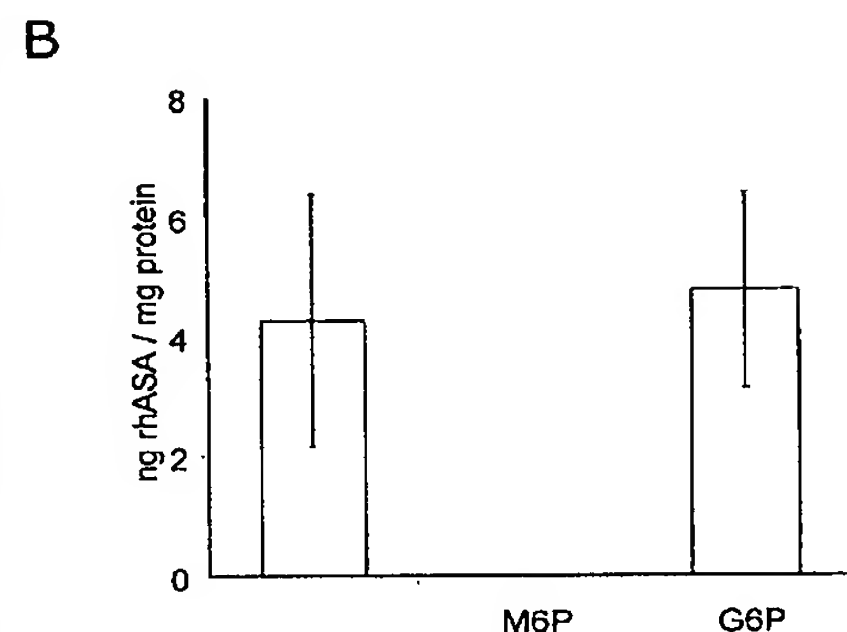
(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,

[Continued on next page]

(54) Title: PRODUCTION AND PURIFICATION OF RECOMBINANT ARYLSULFATASE A



(57) **Abstract:** The present invention pertains to a process for production of recombinant arylsulfatase A in a cell culture system, the process comprising culturing a mammalian cell capable of producing rASA in liquid medium in a system comprising one or more bio-reactors; and concentrating, purifying and formulating the rASA by a purification process comprising one or more steps of chromatography. Other aspects of the invention provides a pharmaceutical composition comprising rASA, which is efficiently endocytosed via the mannose-6-phosphate receptor pathway *in vivo* as well as a rhASA a medicament and use of a rhASA for the manufacture of a medicament for reducing the galactosyl sulphatide levels within target cells in the peripheral nervous system and/or within the central nervous system in a subject. A final aspect of the invention provides a method of treating a subject in need thereof, said method comprising administering to said subject a pharmaceutical composition comprising a rhASA and thereby obtaining a reduction in the galactosyl sulphatide levels in target cells within said subject.



WO 2005/073367 A1